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TYPHOID FEVER

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GENERAL OUTLINE—PERIOD OF INCUBATION—EARLY SYMPTOMS—EARLY TREATMENT.

Typhoid fever was first clearly recognized as a disease distinct from the other fevers and having a specific cause early in the nineteenth century. It is the great fever of the present time. It is found in all countries, is endemic, and often epidemic. It has been given various names, but enteric fever, being suggestive of the local lesions, is the best of all terms for it.

It may occur at any time of the year, but is most common in the autumn months. It is an acute infectious disease, the infection being due to a micro-organism, which is called the bacillus typhosus, or Eberth bacillus. This germ is always derived from a previous case of typhoid fever.

The intestinal discharges are the primary source of infection. The bacilli are introduced most frequently through the medium of water, milk, and vegetables. Water contaminated by defective sewerage has been found to be the frequent cause of epidemics of typhoid. In one outbreak, the source was directly proved to be an oyster-bed over which flowed the drainage from a house in which there had for some time been a typhoid patient. The bacillus may also be transferred through the air or by personal contact, as in the case of nurses or attendants. When cleanliness is enforced, however, in regard to the patient and all articles used in the sick-room, and also the immediate and efficient disinfection and proper disposal of all excreta, infection seldom takes place. For this reason hospitals with safety admit patients to the general wards.

Etiology is important in this disease, for the source of infection can be determined in a large proportion of cases, and earnest effort may prevent infection of many others.

Predisposing causes play a smaller part in typhoid fever than in many other diseases. It is common in young adults, and frequently such, in vigorous health, are rapidly infected and have a severe form.

The seat of the disease is the small intestine, in the lower part of the ileum near the ileocæcal valve. It consists essentially in inflammation and ulceration of the Peyer's patches and the solitary glands. During the first week of the disease there is swelling and thickening of these glands, followed during the second and third weeks by ulcerations tending to perforate, and in the fourth week by healing of the ulcers.

Thus the stages of the disease correspond somewhat to the weeks in the normal course of the fever.

Since in typhoid fever so much depends upon careful nursing,—to a greater extent, it is said, even than in any other disease,—an intelligent understanding of the nature and progress of the fever will assist the nurse in following the necessary precautions, and she will be prepared for the symptoms and complications that may occur in the several stages.

Although the primary lesions are in the intestines, other forms are said to occur, and the typhoid bacillus may act as a pyogenic organism, or one may have pneumonia due to the typhoid bacillus in the lungs, but this is not typhoid fever, which is an intestinal disease, with lesions in the intestines and involvement of the spleen and mesenteric glands. The constitutional reaction is a general septicæmia.

The onset, or period of incubation, varies. In something over fifty per cent. of the cases it is so-called "typical," that is, insidious, with general malaise, lasting from a few days to two weeks. Not infrequently the early development produces no subjective symptoms, and "walking typhoid" is not uncommon. The onset is sometimes fairly sudden, with nausea, vomiting, and diarrhœa, and may be with severe headache only. In rare instances typhoid fever begins abruptly with a chill.

The symptoms of the first week may vary, but in general there is increasing weakness and anorexia. Headache is common and may be very severe. The fever is frequently high. A characteristic point about the temperature is a gradual rise, it being higher each evening than on the previous evening, and the daily drop in the morning becoming less and less until the maximum is reached of 102° to 103° F. in the morning and 103° to 105° F. in the afternoon, which frequently occurs during the first week.

Constipation is characteristic of some cases, but diarrhœa is most common, the intestinal discharges having a characteristic pea-soup appearance not easily mistaken. Epistaxis often occurs as an early symptom. Cough and bronchitis are present early in most cases, varying in amount.

The tongue is moist, red at the tip and edges, with a white coat in the centre. Even in the first week it sometimes becomes dry, brown, and cracked, and, like the teeth and lips, covered with sordes. Abdominal symptoms, as a rule, are not marked during the first week. Some cases have a little pain and distention. Delirium may appear early in the disease, especially in cases where headache is an early or severe symptom.

The characteristic eruption of rose-spots, an enlarged spleen, and a positive " Widal test" are put down as symptoms of the second week, but some patients have the rose-spots and spleen who have given a definite history of feeling perfectly well up to within four or five days previous. In such cases these must be included as symptoms of the first week. A positive serum reaction is perhaps less common, but sometimes does occur.

Some very rapidly developing cases spoken of as " typhoid septicæmia" quickly show a high temperature, rapid pulse, marked toxic state, and delirium, and die before positive signs develop. In many cases the " typhoid state" or " typhoid look" is marked. The patient shows great muscular weakness, is stupid or apathetic, lying on the back with a tendency to sink down in bed.

" The object of treatment" in typhoid fever, as summed up by Dr. Wilson in his " Fever Nursing," is " to place the patient under the best possible hygienic conditions, to guard him against all unfavorable influences, to sustain him by proper nourishment, to combat symptoms as they arise, and, finally, to see that he does not become a centre from which the disease may spread." Perfect rest and quiet, careful feeding, cleanliness, prevention of bed-sores, reduction of temperature when necessary, good ventilation, and the frequent use of disinfectants are some of the essentials in the care of the disease.

The giving of nourishment regularly, in sufficient quantity and of a suitable kind, is of the greatest importance to the patient. Although physicians differ in regard to the diet to be allowed typhoid patients, it is generally agreed that a liquid diet comprising chiefly milk and beef-tea is most suitable, since this is most nourishing, most easily digested, and is least irritating to the intestines, and the rule is usually followed that no solid food shall be given until the temperature has been normal for a week. At first about three pints of milk and a pint of beef-tea is as much as can be taken in the twenty-four hours. It is better to give these alternately, about four ounces at a time, at intervals of two hours during the day, and of three or four during the night. The quantity to be given at a time and the intervals of feeding often have to be governed by the discretion of the nurse, influenced by the patient's condition, but always conforming to the doctor's directions. Lime-water or siphon soda may be added to the milk, or the milk or beef-tea may be peptonized if not well digested.

Thirst may be relieved by crushed ice and lemonade. Plenty of water should also be given to drink, not only for thirst, but to aid in the elimination of the added waste material caused by the fever.

Great care should be taken to keep the patient's mouth and tongue thoroughly cleansed, so that he may be more comfortable and digestion may not be retarded.

The patient must be kept in the recumbent position, but not on the back all the time, since this promotes bed-sores and is conducive to hypostatic pneumonia. The position should be changed systematically at every time of feeding.

The skin must be protected by bathing with alcohol and kept dry by using powder. Pressure must be removed when necessary.

Hydrotherapy is especially useful in typhoid fever, and, after diet and rest, most frequently enters into the treatment of the first week. Baths are usually given every four hours, when the temperature reaches 102.5° F. or over. Sponge-baths are thought to be the best. Fan-baths are useful. Tub-baths involve the added shock of moving the patient, and are used less than formerly. A bath not only reduces the temperature, but also serves as a heart stimulant and a brain sedative. Dr. Osler in the last edition of his book mentions that half a dram of guiacol painted on the thigh will serve to reduce temperature, and may be tried occasionally instead of a bath.

Constipation is usually treated by small enemas of strong, warm soapsuds, repeated every other day if necessary. Large enemas should not be given, since they increase peristalsis, which must be avoided on account of the weakened condition of the intestinal wall. Excessive diarrhœa, especially if causing exhaustion, is controlled by first regulating the diet, avoiding beef-tea, and further, if necessary, by enemas of starch and opium.

Retention of urine, cough, character of expectoration, pain in the ear, or deafness are symptoms to be looked for in the nursing care and faithfully reported.

The virulence of the intestinal discharges in typhoid fever must be constantly borne in mind, and in every case the greatest care should be taken for their proper disinfection, with strict observance of all the details of cleanliness and the careful sterilization of all articles which are soiled by the patient. Chloride of lime is the best disinfectant for excreta. It is commonly used in a solution 1 to 32. Dry, freshly slaked lime and milk of lime are also good, and are sometimes more easily obtained. Milk of lime is made by dissolving one quart of dry, freshly slaked lime in four or five quarts of water. Corrosive sublimate is rendered futile as a disinfectant for typhoid excreta on account of the albumen which they contain.

The urine should receive as careful attention as the intestinal discharges, since it is said that in one-third of the cases the typhoid bacillus can be found in the urine and remains present for a longer time.

Soiled clothing should be first treated with a disinfectant and then boiled before being washed.

Especial care must be taken in regard to disinfection if the patient is in the country, where plumbing and other sanitary arrangements are not the best.

COURSE OF STUDY FOR NURSES' TRAINING-SCHOOL

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In making out this course of study, the plan has been to make the freshman period preparatory, the nurses to go into the wards at the beginning of the sophomore period if they are to be retained in the school. The pupils in the training-school number twenty-five, six to be taken in October 1 and April 1 each year. The spring class to have the regular six-months' work (from April to October) and thus be ready October 1 to go on with the work as planned for the junior year, making a class of twelve for graduation.

OFFICERS TO BE:

Superintendent of training-school, assistant superintendent, clinical nurse, instructor in dietetics.

INSTRUCTORS.

Dietetics, instructor in dietetics; massage, a masseuse; bacteriology, surgeon; materia medica, physician; surgical and gynæcological nursing, superintendent of training-school or clinical nurse; physiology and anatomy, medical nursing, obstetrical nursing, nursing in diseases of the eye, ear, nose, and throat, urinary analysis, superintendent of training-school or assistant. Lectures to be given by physicians and surgeons.

EXAMINATIONS (GIVEN BY INSTRUCTORS).

At the end of the freshman period, three: dietetics, bacteriology, practical work.

At the end of the sophomore period, one: physiology and anatomy.

At the end of the junior period, six: medical nursing, including